

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
15 April 2004 (15.04.2004)

PCT

(10) International Publication Number
WO 2004/031816 A2

(51) International Patent Classification⁷: **G02B 5/00**

(21) International Application Number:
PCT/GB2003/004360

(22) International Filing Date: 3 October 2003 (03.10.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0222962.3 4 October 2002 (04.10.2002) GB

(71) Applicant (for all designated States except US): **RENISHAW PLC** [GB/GB]; New Mills, Wotton-under-Edge, Gloucestershire GL12 8JR (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **CHAPMAN, Mark, Adrian, Vincent** [GB/GB]; 116 Bearlands, Wotton-under-

Edge, Gloucestershire GL12 7SB (GB). **LEE, William, Ernest** [GB/GB]; 11 Stones Court, Redland, Bristol, Bristol BS5 6YA (GB). **LIAO, Tingdi** [CN/GB]; 11 Brecon Close, Paignton, Devon TQ4 7GF (GB).

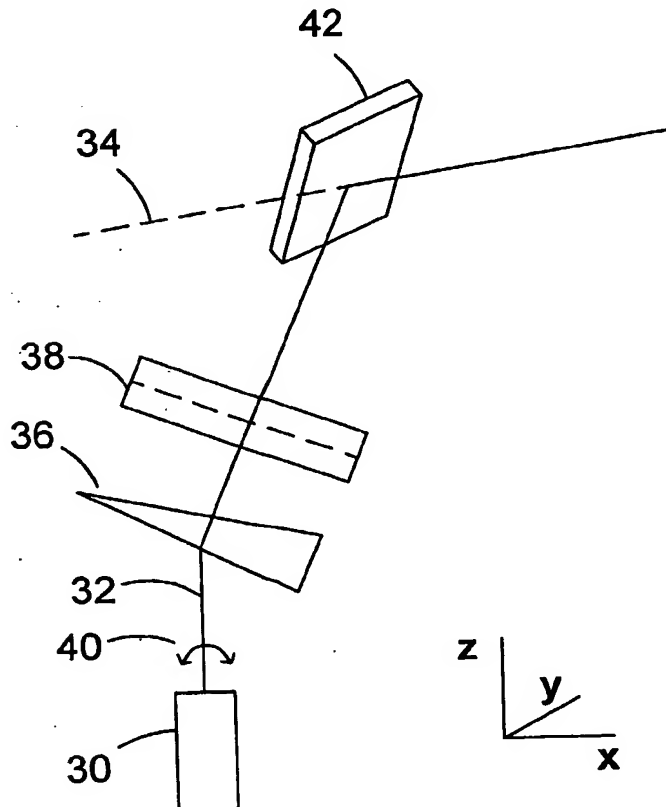
(74) Agent: **FOWLER, Maria, Jayne**; Renishaw plc, Patent Department, New Mills, Wotton-under-Edge, Gloucestershire GL12 8JR (GB).

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),

[Continued on next page]

(54) Title: LASER SYSTEM



(57) Abstract: A laser system and interferometer are disclosed comprising a laser source (10,51) for generating a laser beam (12,52), and first (16,36,57) and second (18,38,58) adjustable elements wherein the first (16,36,57) and second (18,38,58) adjustable elements have limited rotational motion so rotation of the first adjustable element causes deviation of a laser beam in one plane and rotation of the second adjustable element causes deviation in a second plane, and a laser beam (12,52) from the laser source (10,51) is oblique to a required beam direction (14,34,60) whereby rotation of the adjustable elements deviates the laser beam enabling alignment of the laser beam to the required beam direction. The adjustable elements may be rotatable through 90°. The first and second planes may be perpendicular to the required beam direction and to each other. At least one mirror (42,56) may be provided which can be angularly offset to the required beam direction.

WO 2004/031816 A2